

REMARKS

Applicant filed an RCE on September 1, 2006. Applicant respectfully requests amendment of the claims submitted with the RCE prior to examination. Applicant has amended the claims to provoke an interference with U.S. Patent Application No. 10/284,424 of Hundt et al. New claims 43-70 have been added, copied directly from currently pending claims of U.S. Patent Application No. 10/284,424 of Hundt et al., as amended through September 11, 2006. Support for these new claims is shown below. No new matter is added. As a result, claims 1-70 are now pending in the instant application. The total number of claims increased by 28 to a total of 70 claims, and the total number of independent claims increased by 3 to a total of 10 claims. Please charge the \$1,000 fee for the additional claims, plus any additional claim fees or other required fees, or credit overpayment to Deposit Account number 502931.

Applicant Suggesting an Interference Under 37 C.F.R. § 41.202

In order to comply with 37 C.F.R. § 41.202, Applicant provides the following:

(1) Identification of the Application with Which the Applicant Seeks an Interference

Applicant identifies pending U.S. Patent Application No. 10/284,424 by Hundt et al., filed October 29, 2002, as the application with which Applicant seeks an interference.

(2) Identification of the Claims Believed to Interfere, Proposed Count, and Claim Correspondence

Claims 43-70 are exact copies, respectively, of claims 1-22 and 34-39, respectively, of pending Application No. 10/284,424 of Hundt et al., and so interfere. These claims appear to form a single group since no restriction requirement was raised by the Examiner during prosecution of Application No. 10/284,424 of Hundt et al. To facilitate the Interference process, claim 43 of the present application, which is an exact copy of the pending claim 1 of Application No. 10/284,424 of Hundt et al., is proposed as Count 1:

Count 1

1. An apparatus comprising:
 - a thin-film battery affixed to at least one surface of a substrate;
 - a bonding pad located on the substrate and distanced from the thin-film battery, the bonding pad being electrically coupled to the thin-film battery;
 - a protective coating located on the thin-film battery;
 - a device affixed to said thin-film battery via the protective coating, the protective coating being located between the thin-film battery and the device, and electrically coupled to the thin-film battery through a conductor coupled to the bonding pad, the conductor being external to the thin-film battery and to the device; and
 - an encapsulant to encapsulate the device, the thin-film battery, the external conductor, and the bonding pad.

Claims 43-70 in the present invention and claims 1-22 and 34-39, respectively, of pending Application No. 10/284,424 of Hundt et al., all correspond to the same invention, and as such, correspond to Count 1.

(3) Claim Chart for the Count

As the proposed Count 1 is identical to both claim 43 of the present application and claim 1 of pending U.S. Patent Application No. 10/284,424 of Hundt et al., therefore, the count and the claim of the present invention and Application No. 10/284,424 of Hundt et al. correspond exactly.

<u>Claim 1 of App. 10/284,424 of Hundt et al.</u>	<u>Claim 43 of Present Application</u>
An apparatus comprising: a thin-film battery affixed to at least one surface of a substrate;	An apparatus comprising: a thin-film battery affixed to at least one surface of a substrate;
a bonding pad located on the substrate and distanced from the thin-film battery, the bonding pad being electrically coupled to the thin-film battery;	a bonding pad located on the substrate and distanced from the thin-film battery, the bonding pad being electrically coupled to the thin-film battery;

a protective coating located on the thin-film battery;	a protective coating located on the thin-film battery;
a device affixed to said thin-film battery via the protective coating, the protective coating being located between the thin-film battery and the device, and electrically coupled to the thin-film battery through a conductor coupled to the bonding pad, the conductor being external to the thin-film battery and to the device; and	a device affixed to said thin-film battery via the protective coating, the protective coating being located between the thin-film battery and the device, and electrically coupled to the thin-film battery through a conductor coupled to the bonding pad, the conductor being external to the thin-film battery and to the device; and
an encapsulant to encapsulate the device, the thin-film battery, the external conductor, and the bonding pad.	an encapsulant to encapsulate the device, the thin-film battery, the external conductor, and the bonding pad.

Since the claims are identical, the subject matter of claim 43 of the present application would, if prior art, have anticipated or rendered obvious the subject matter of claim 1, as presently amended by its applicant, of U.S. Patent Application No. 10/284,424 by Hundt et al., and vice versa, the claims interfere within the meaning of Sec. 41.203(a).

(4) Why Applicant Will Prevail on Priority

The above-identified U.S. Patent Application No. 09/815,884 was filed March 23, 2001, published March 28, 2002, and claimed priority to three U.S. Provisional Applications:

- Application No. 60/191,774, filed March 24, 2000, titled "Comprehensive Patent for the Fabrication of a High Volume, Low Cost Energy Products Such as Solid State Lithium Ion Rechargeable Battery, Supercapacitors and Fuel Cells";
- Application No. 60/225,134, filed August 14, 2000, titled "Apparatus and Method for Rechargeable Batteries and for Making and Using Batteries"; and
- Application No. 60/238,673, filed October 6, 2000, titled "Battery Having Ultrathin Electrolyte".

U.S. Patent Application No. 10/284,424 by Hundt et al., was filed October 29, 2002, and did not claim any priority.

Consequently, the present Application No. 09/815,884 will prevail on priority.

Furthermore, the present application is substantially similar to Application No. 09/816,628, also filed on March 21, 2001, now U.S. Patent 6,805,998, which was incorporated by reference in the present application. Application No. 09/816,628 was published on October 25, 2001, as US 2001/0033952 A1, more than one year prior to the filing date of Application No. 10/284,424 of Hundt et al.

(5-6) Claim Charts

The following claim chart shows for each new claim the corresponding written description in the specification of the present application as filed and published. Also shown is where the disclosure provides a constructive reduction to practice within the scope of the interfering subject matter.

Support for the claims is found in the original application of the present application as follows:

<u>Newly Added Claim in Present Application, as Currently Amended to Provoke an Interference</u>	<u>Support As Filed March 23, 2001, Paragraph Numbers (shown as [nnnn]) from Application as Published - US 2002/0037756</u>
43. An apparatus comprising:	
a thin-film battery affixed to at least one surface of a substrate;	A battery=cathode, LiPON, anode and substrate 920 in Fig. 9A; Fig. 9B; battery 2320 and substrate 2310 in Fig. 23; battery 2320 and substrate 2410 of Fig. 24A; battery under IC 2510 of Fig. 26A; and passages describing Figs. 9A, 9B, 23, 24A and 26A, and Paragraph [0009].
a bonding pad located on the substrate and distanced from the thin-film battery, the bonding pad being electrically coupled to the thin-film battery;	Contacts 923A & 923B in Fig. 9A; contact 2322 in Fig. 23; and contacts 2514 & 2515 in Fig. 25A; and passages describing listed figures.
a protective coating located on the thin-film battery;	Passivation, sixth film 79 in Fig. 1D, described in Paragraph [0171]; passivation layer 934 in Figs. 9A & 9B, described in Paragraph [0191]; and passivation layer 2329 in Fig. 25E, described in Paragraph [0269].
a device affixed to said thin-film	The adhesive described in Paragraph [0251]

<p>battery via the protective coating, the protective coating being located between the thin-film battery and the device, and electrically coupled to the thin-film battery through a conductor coupled to the bonding pad, the conductor being external to the thin-film battery and to the device; and</p>	<p>attaches IC device 940 to protective layer in Fig. 9A; circuit 2340 to layer 2331 in Fig. 23; device 2430 and integrated circuit 2440 in Fig. 24A, and IC 2510 and cell 2650 in Fig. 26A.</p>
<p>an encapsulant to encapsulate the device, the thin-film battery, the external conductor, and the bonding pad.</p>	<p>Encapsulation layer 2760 in Fig. 27E & 27J, and described in Paragraph [0287]; Figure 27H, 27J showing semiconductor 2440 and encapsulated package 2700</p>
<p>44. The apparatus of claim 43, wherein said thin-film battery affixed to at least one surface comprises: an anode of said thin-film battery electrically coupled to an anode current collector proximate to the at least one surface.</p>	<p>(Prior art) Anode current collector 34 proximate top surface of substrate 22 in Fig. 1A and described in Paragraph [0004].</p>
<p>45. The apparatus of claim 44, wherein said anode current collector of said thin-film battery electrically coupled to the anode current collector proximate to the at least one surface comprises:</p>	<p>(sic, first mention of “anode current collector” should be “anode”)</p>
<p>said anode of said thin-film battery electrically coupled to a conductive substance of the substrate, which is a part of a part of a semiconductor package substrate.</p>	<p>(sic, mention of “anode” should be “anode current collector”) Anode 932 coupled to anode current collector (“contact film” 926) proximate top surface of substrate 920+930 in Fig. 9B and Paragraph [0194]</p>
<p>46. The apparatus of claim 43, wherein</p>	

said thin-film battery affixed to at least one surface comprises:	
a cathode of said thin-film battery electrically coupled to a cathode current collector proximate to the at least one surface.	Figs. 1A, 9A, 9B and 9C; Cathode current collector 32 proximate top surface of substrate 22 in Fig. 1A, described in Paragraph [0004]; cathode contact film 924 in Fig. 9A and 9B, described in Paragraph [0191]; cathode contact 924 in Fig. 9C, described in Paragraph [0196].
47. The apparatus of claim 46, wherein said cathode of said thin-film battery electrically coupled to the cathode current collector proximate to the at least one surface comprises:	
said cathode current collector of said thin-film battery electrically coupled to a conductive substance of the substrate, which is a part of a semiconductor package substrate.	Figures 27H, 27J showing semiconductor 2440 and encapsulated package 2700
48. The apparatus of claim 43, wherein	Figures 9A and 9B
said thin-film battery affixed to the at least one surface of the substrate is affixed to a conductive trace and at least one dielectric layer present on the surface of the substrate.	battery affixed to trace 923A, insulating dielectric layer 930 on substrate 920 (and passivation dielectric 934 on top of battery)
49. The apparatus of claim 48, wherein said thin-film battery affixed to the substrate comprises:	Figure 23

said thin-film battery affixed to a ball grid array substrate.	ball-grid array connections 2341 on battery 2320; also see Paragraph [0129]
50. The apparatus of claim 43, wherein said thin-film battery affixed to at least one surface comprises:	
said thin-film battery having a height of substantially 15 micrometers or less.	Fig. 7 second film 1-5 microns, Par. [0165] third film less than 1 micron or 10 to 100 Angstroms (=0.001 to 0.01 micron), Par. [0166] fourth film 10-40 microns, Paragraph [0168] thus battery 11.001 to 46 microns, including substantially 15 micrometers or less (second film=5 microns or less, third film 0.001 microns, fourth film = 10 microns)
51. The apparatus of claim 43, wherein said thin-film battery affixed to at least one surface comprises:	
said thin-film battery having a height substantially less than a height of an integrated circuit substrate.	elevational views not to scale 11.001 microns is thinner than conventional IC
52. The apparatus of claim 43, wherein said thin-film battery affixed to at least one surface comprises:	
a lithium ion or lithium-free thin-film battery affixed to the at least one surface.	metal anode, lithium ions transported through electrolyte 928, Paragraph [0199], In addition, US Patent 5,569,520 issued to Bates October 29, 1996 is incorporated by reference. It says "An alternative to depositing a Li film is to extract the needed Li from the

	cathode in those cases in which the battery is fabricated in the discharged state.”
53. The apparatus of claim 43, wherein said device affixed to said thin-film battery comprises:	
an integrated circuit affixed to said thin-film battery.	Fig. 23 – IC 2340, Fig. 9A – IC 940
54. The apparatus of claim 53, wherein said integrated circuit affixed to said thin-film battery comprises:	
an integrated circuit substrate affixed to at least one surface of said thin-film battery.	Fig 23 – IC 2340
55. The apparatus of claim 53, wherein said integrated circuit component affixed to said thin-film battery comprises:	
at least one electric circuit electrically connected coupled with said thin-film battery via the conductor coupled to the bonding pad.	Fig 23 – IC 2340
56. The apparatus of claim 43, wherein the apparatus device comprises a part of:	
a computer system of a computer-system group including a handheld computer system, a personal computer system, a workstation computer system, a minicomputer system, and a mainframe computer system.	Fig 15D 1504 = PDA case Paragraph [0002] supports the computer system group, since not exclusive

57. The apparatus of claim 43, wherein the apparatus device comprises a part of:	
a wireless device of a wireless-device group including a wireless phone, a wireless handheld computer, a wireless modem, a wireless email unit, and a Global Positioning System locator.	Fig 15E cell phone (wireless) as described in Par. [0225]; Paragraph [0002] supports the wireless-device group, since not exclusive Integrated circuit 2440 including a wireless communication circuit in Fig. 24A as described in Par. [253].
58. An apparatus comprising:	
a thin-film battery affixed to a substrate;	battery=cathode, LiPON, anode of battery 2320 in Figure 23 or 24A or under IC 2510 of Figure 26A substrate 920 or 2410 or 2510
a bonding pad located on the substrate and distanced from the thin-film battery, the bonding pad being electrically coupled to the thin-film battery;	Fig 9A and 9B pad 923B or Fig 23 pad 2322 or Fig 26A pad 2515
a protective coating located on the thin-film battery;	Protective/electrically insulating layer 2331 in Fig. 23 as described in Par. [250].
an integrated circuit affixed to and overlying said thin-film battery via the protective coating, the protective coating being located between the thin-film battery and the integrated circuit, and electrically coupled to the thin-film battery through a conductor coupled to the bonding pad, the conductor being external to the thin-film	IC device 940, 2430, 2440 or 2650 protective layer 2331 of Figure 23 paragraph [0251] says some embodiments attach IC to protective layer using adhesive conductor = solder ball 2341 or wire 2441

battery and to the integrated circuit; and	
an encapsulant to encapsulate the integrated circuit, the thin-film battery, the external conductor, and the bonding pad.	Encapsulation layer 2760 in Fig. 27E & 27J, and described in Paragraph [0287]; Figure 27H, 27J showing semiconductor 2440 and encapsulated package 2700
59. The apparatus of claim 58, wherein the substrate includes a surface having a conductive trace and at least one dielectric layer present thereon, the thin-film battery being formed over at least a portion of the conductive trace and the at least one dielectric layer.	Figure 9B insulator 930 (non-conducting of electricity) = dielectric (non-conducting of electricity), 922A, 922B = trace
60. The apparatus of claim 58, wherein said protective coating is an insulating layer interposed between said thin-film battery and said integrated circuit.	Protective insulating layer 2331 of Figure 22E
61. The apparatus of claim 58, wherein said integrated circuit affixed to and overlying said thin-film battery comprises:	
said thin-film battery having a height substantially less than a height of an integrated circuit substrate.	Fig. 7 second film 1-5 microns, Par. [0165] third film less than 1 micron or 10 to 100 Angstroms (=0.001 to 0.01 micron), Par. [0166] fourth film 10-40 microns, Paragraph [0168] thus battery 11.001 to 46 microns, including substantially 15 micrometers or less (second film=5 microns or less, third film 0.001 microns, fourth film = 10 microns)

62. The apparatus of claim 58, wherein said thin-film battery comprises:	
a lithium ion or lithium-free thin-film battery.	metal anode, lithium ions transported through electrolyte 928, Paragraph [0199], In addition, US Patent 5,569,520 issued to Bates October 29, 1996 is incorporated by reference. It says "An alternative to depositing a Li film is to extract the needed Li from the cathode in those cases in which the battery is fabricated in the discharged state."
63. The apparatus of claim 58, wherein said integrated circuit affixed to and overlying said thin-film battery comprises:	
an integrated circuit substrate affixed to at least one surface of said thin-film battery.	Fig 23 surface 2322 or Fig 26A surface 2515
64. The apparatus of claim 58, wherein said integrated circuit affixed to and overlying said thin-film battery comprises:	
at least one electric circuit electrically coupled with said thin-film battery through the conductor coupled to the bonding pad.	Fig 9A 9B Fig 23 Fig 26A pad 923B or 2322 or 2515
65. The apparatus of claim 43, further comprising:	
an insulating layer located between the battery and the substrate, the insulating layer having a portion extending over the substrate external to the battery; and	Figure 9B layer 930 and layer 934

<p>a conductive trace located on the substrate between the insulating layer and the substrate, the insulating layer having an opening located in the portion that extends external to the battery to expose a region of the conductive trace and to accommodate the bonding pad to allow electrical connection between the conductor coupled to the bonding pad and the region of the conductive trace.</p>	<p>Figure 9B trace 922A or 922B</p> <p>shown in Figure 9A</p> <p>opening described in paragraph [0191] “A passivation layer 934 is formed over all of the films except portions 923A and 923B of the wiring patterns 922A and 923B, which portions are left exposed.”</p>
<p>66. The apparatus of claim 58, further comprising:</p>	
<p>an insulating layer located between the battery and the substrate, the insulating layer having a portion extending over the substrate external to the battery; and</p>	<p>Figure 9B layer 930 and layer 934</p>
<p>a conductive trace located on the substrate between the insulating layer and the substrate, the insulating layer having an opening located in the portion that extends external to the battery to expose a region of the conductive trace and to accommodate the bonding pad to allow electrical connection between the conductor coupled to the bonding pad and the region of the conductive trace.</p>	<p>Figure 9B trace 922A or 922B</p> <p>shown in Figure 9A</p> <p>opening described in paragraph [0191] “A passivation layer 934 is formed over all of the films except portions 923A and 923B of the wiring patterns 922A and 923B, which portions are left exposed.”</p>
<p>67. An apparatus comprising:</p>	<p>Figures 9A, 24A, 26A</p>
<p>a thin-film battery affixed to at least one surface of a substrate;</p>	<p>battery=cathode, LiPON, anode of 2320 in Figure 23 or 24A</p> <p>or under IC 2510 of Figure 26A</p>

	substrate 920 or 2410 or 2510
a protective coating located on the thin-film battery;	Protective/electrically insulating layer 2331 in Fig. 23 as described in Par. [250].
a device affixed to said thin-film battery via the protective coating, and electrically coupled to the thin-film battery through a conductor external to the thin-film battery and to the device; and	device 940, 2430, 2440 or 2650
an encapsulant to encapsulate the device and external conductor.	Encapsulation layer 2760 in Fig. 27E & 27J, and described in Paragraph [0287]; Figure 27H, 27J showing semiconductor 2440 and encapsulated package 2700
68. The apparatus of claim 67, further comprising:	
an insulating layer located between the battery and the substrate, the insulating layer having a portion extending over the substrate external to the battery; and	Figure 9B layer 930 and layer 934
a conductive trace located on the substrate between the insulating layer and the substrate, the insulating layer having an opening located in the portion that extends external to the battery to receive the conductor and to allow electrical connection between the conductor and the conductive trace.	Figure 9B trace 922A or 922B shown in Figure 9A opening described in paragraph [0191] "A passivation layer 934 is formed over all of the films except portions 923A and 923B of the wiring patterns 922A and 923B, which portions are left exposed."
69. The apparatus of claim 67, further comprising a bonding pad located external to	Figure 9A combined with Figs. 27C and 27J.

the battery and onto which the external conductor is electrically coupled, the encapsulant further encapsulating the bonding pad.	
70. The apparatus of claim 67, wherein the encapsulant further encapsulates at least a portion of the battery and substantially most of the external conductor.	Figure 9A combined with Figs. 27C and 27J.

CONCLUSION

Applicant respectfully submits that the subject matter disclosed in the specification and drawings of U.S. Patent Application No. 09/815,884 prevails on priority over claims 1-22 and 34-39 of pending U.S. Patent Application No. 10/284,424, of Hundt et al.

Applicant respectfully submits that claims presented above are supported by the present application and are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney Charles A. Lemaire (952-278-3501) to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account Number 502931.

Respectfully submitted,

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